WESTINGHOUSE ELECTRIC COMPANY LLC

COLUMBIA FUEL FABRICATION FACILITY

PRESENTATION TO THE U.S. NUCLEAR REGULATORY COMMISSION

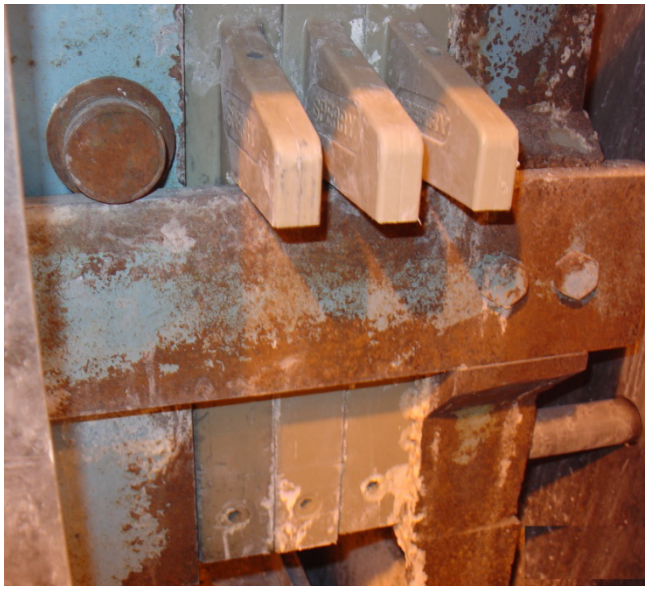
PRE-DECISIONAL ENFORCEMENT CONFERENCE NRC INSPECTION REPORT NO. 70-1151/2010-202

January 21, 2011

Introductory Remarks

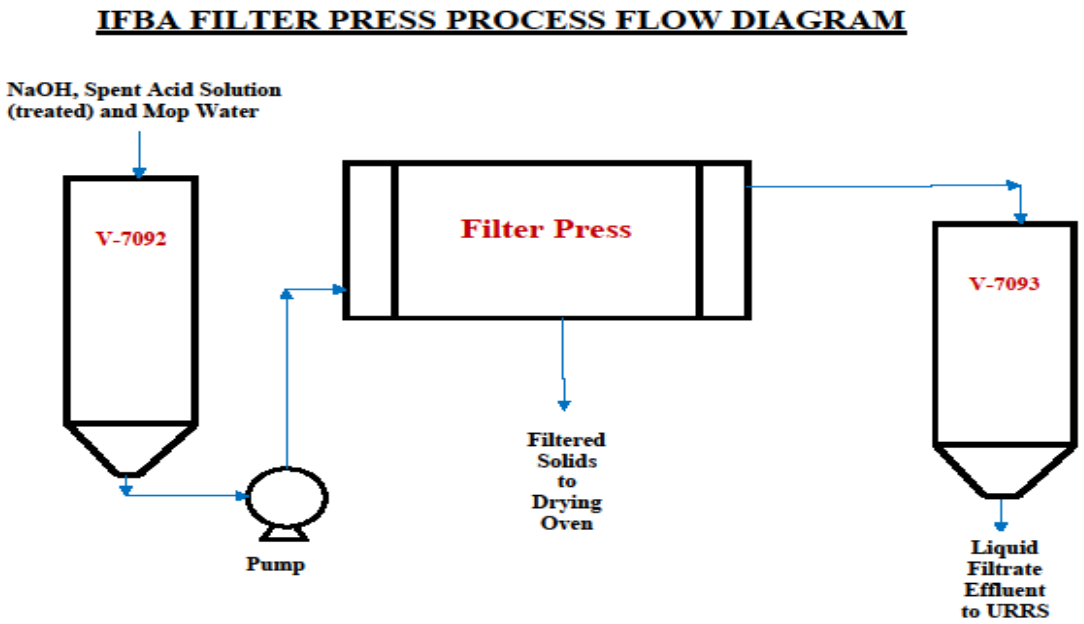
- Westinghouse Columbia Fuel Management is here today to discuss our view of the event, the apparent violations, and the corrective actions completed or in progress.
- Westinghouse is in alignment with the NRC regulatory position on passive design features and has institutionalized this position to ensure compliance. This common understanding is the key to our corrective actions.
- Westinghouse is continually working to improve all aspects of our operation at Columbia including safety and compliance.
- Westinghouse will address the issues that led to this event, and ensure our shared goal of safe and compliant production of fuel at the Columbia Plant continues.

Event Overview

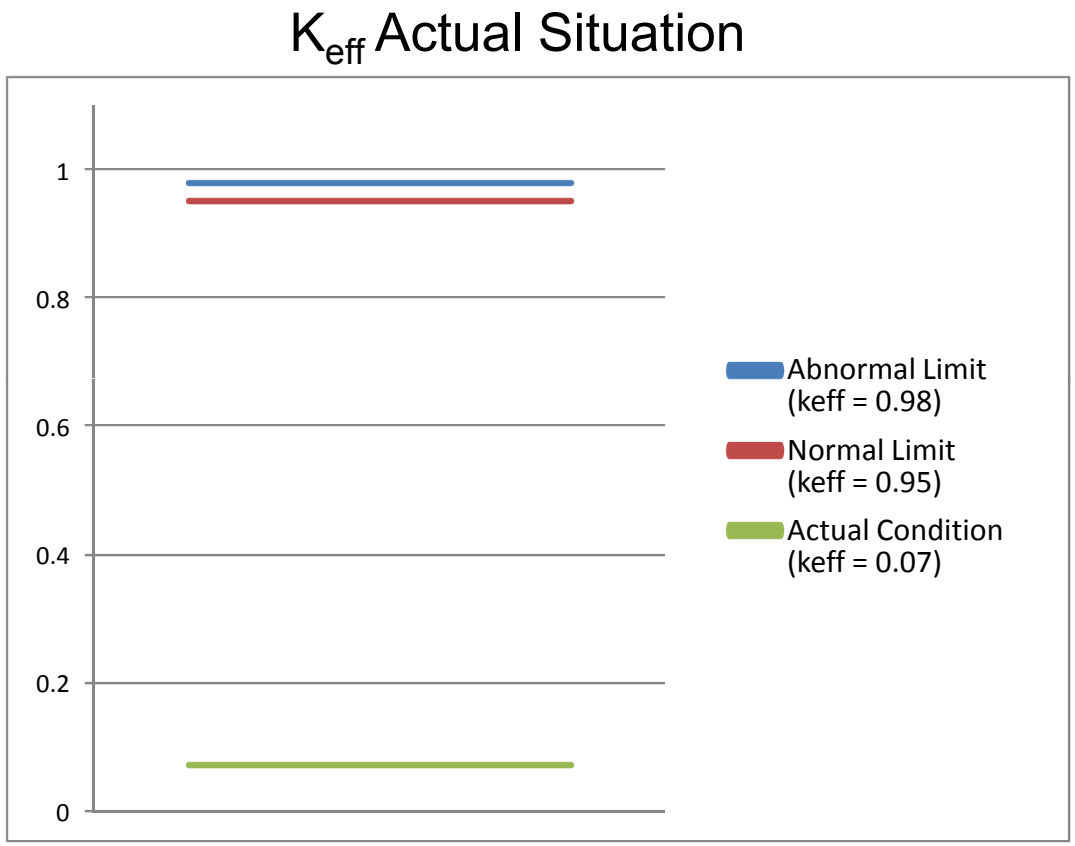


- The Integral Fuel Burnable Absorber (IFBA) Filter Press did not meet the design criteria when the “peg” passive design feature failed.
- Westinghouse self identified the issue during troubleshooting activities and promptly reported the issue to the NRC.
- Safety significance was low:
  - Uranium concentration is well below criticality safety limits.
  - The number of plates installed never exceeded the authorized number of plates.

Process Overview



Event Safety Significance



Apparent Violations 1 & 2

- Apparent Violation (AV) 70-1151/2010-202-01: *The licensee failed to establish Double Contingency for the filter press to protect against an inadvertent criticality.*
- Apparent Violation (AV) 70-1151/2010-202-02: *The licensee failed to establish items relied on for safety to reduce the likelihood of a credible high consequence event to highly unlikely.*

- The apparent violations occurred. However, they are related and Westinghouse requests NRC consider combining these apparent violations into one Severity Level IV violation.

Background Information – APV1 & 2

- Approved procedures allowed design features (DF) designated as Safety Significant Controls (SSCs) to be utilized in Criticality Safety Evaluations (CSEs) to conclude a scenario was *incredible*. Where *credible* scenarios are involved, we have never hesitated to identify Items Relied On For Safety (IROFS) [we have hundreds].
- In most cases, these DFs are a basic component of the process and were not viewed as "controls." Westinghouse previously viewed the use of SSCs an acceptable situation because we applied the full suite of management measures to SSCs as well as to IROFS.
- This approach left us vulnerable if unanticipated DF failure modes were encountered. In this occurrence, the design was assumed robust for intended use.

Event Related Corrective Actions – APV 1 & 2

- Filter press operations were stopped. Causal Analysis was completed.
- Revised the IFBA filter press analysis (established double contingency & IROFS) and the filter press plate design was upgraded, before restart was authorized. *[Complete September 2010]*
- URRS filter press replaced with safe geometry centrifuge (credible scenarios, double contingency & IROFS). *[Complete November 2010]*
- Incorporated findings and lessons learned from event and causal analysis into training case studies for Nuclear Safety Qualification Training, Environmental Health and Safety (EH&S) Certification Training, Knowledge Worker and Operations Human Performance training, as appropriate. *[Complete December 2010]*

Programmatic Corrective Actions – APV 1 & 2

- Evaluated extent of condition relative to other passive engineered features used in incredible scenarios. *[Complete August 2010]*
- Evaluated our posture pertaining to incredible scenarios and made the decision to file an additional event report for non-compliance with regulations in July 2010.
- Restored Compliance *[Complete July 2010]*
  - Issued a policy to designate all passive SSCs in incredible scenarios as IROFS, and
  - Designated Facility Walkthrough Assessments (FWAs) as IROFS to address double contingency. FWAs were already a License Condition.

Programmatic Corrective Actions – APV 1 & 2

- A license submittal was generated to address issues discovered as part of CSE development, and to propose the completion of NCSIP-II as a License Condition.
- NCSIP-II CSE development is proceeding with a commitment to be completed prior to January 2013 ISA summary submittal to NRC.
- Westinghouse insight relative to these apparent violations:
  - ***Not acknowledging the impact of the previous difference in opinion with NRC regarding the treatment of incredible scenarios, and therefore not making an appropriate decision to mitigate the associated risk, contributed to the occurrence of this filter press event, and these apparent violations in particular.***

Apparent Violation 3

- AV 70-1151/2010-202-03: *The licensee performed Criticality Safety Evaluations in which a criticality accident scenario was classified as incredible based on the dependence on SSCs, which were not designated as IROFS, in accordance with approved procedures. Specifically, the licensee failed to designate the peg and hole design of the filter press as an IROFS when the conclusion for the accident scenario was determined to be incredible based on the peg and hole design feature.*

- Westinghouse requests that NRC consider this apparent violation as *another example of violation 70-1151/2009-201-01*. The corrective actions associated with the completion of the NCSIP-II will address violation 70-1151/2009-201-01, as well as Westinghouse's understanding of AV 70-1151/2010-202-03.

Corrective Actions – AV 3

- The previous incredible scenarios will be converted to credible scenarios with double contingency in place and appropriate IROFS identified EXCEPT in those cases where the scenario description meets the strict definition of incredible submitted with the license application.
- This work will be completed as part of the NCSIP-II, which is scheduled to be complete prior to the January 2013 ISA summary submittal to the NRC. Quarterly status reports to the NRC on progress towards completion are planned.

Apparent Violation 4

- AV 70-1151/2010-202-04: *The licensee failed to establish and follow an adequate operating procedure for the IFBA filter press.*
- The apparent violation is accepted. The procedure was inadequate because checks of the filter press design and assembly were not identified as being necessary for this operation. This was an assumption that Westinghouse did not validate.
- Based on the low safety significance of the event, and corrective actions taken, Westinghouse requests that NRC consider classifying this apparent violation a Severity Level IV violation.

Corrective Actions – AV 4

- The applicable IFBA operating procedure was revised to implement Double Contingency with IROFS. *[Complete August 2010]*
  - Operator verification of number of plates when filter press is opened and immediately prior to filter press being closed.
  - Inspection of filter press pegs to determine if any are loose.
  - Manager and process engineer verification of number of plates when filter press is opened and immediately prior to filter press being closed.
  - Manager and process engineer verification of filter press plate design and dimensions prior to initial installation after procurement.
  - A new form was created to document these inspections.

Apparent Violation 5

- AV 70- 1151/2010-202-05: *The licensee failed to make a change to facility equipment in accordance with procedure TA-500. Specifically, the peg holes for the failed IFBA filter press were 0.508 inches, which deviated from the system design drawing requiring that the holes be 0.500 inches in diameter, which subsequently led to the pegs not fitting properly into the peg holes.*
- This apparent violation is denied.
- Westinghouse utilizes standard tolerancing (Machine and Tool Practices; Kibbe, Neely, Meyer, White; Prentice Hall, 1999) which is a common engineering practice. The feature was called out as a fraction, ½ inch. Standard tolerance practice assigns 1/64 inch tolerance (.016). There was no violation of TA-500 Configuration Control.

Apparent Violation 6

- AV 70-1151/2010-202-06: *The licensee failed to make a change to facility equipment in accordance with procedure TA-500. Specifically, the pegs in the IFBA filter press plate were replaced without glue, which deviated from the system design drawing requiring the pegs to be glued into the peg holes with PVC glue.*

- This apparent violation is accepted. Westinghouse requests that NRC consider this apparent violation as a Level IV violation due to the low safety significance.
- The “knowledge gap” which contributed to this field performance issue was predicated by the “incredible” determination made in the CSE.

Corrective Actions – AV6

- The filter press plates were restored to compliance per upgraded design and criticality safety control requirements. *[Complete August 2010]*
- As discussed previously, multiple configuration control verifications were added to the applicable IFBA procedure. *[Complete August 2010]*
- Documentation of the configuration control verifications is now accomplished via a new form created to complement the procedure changes. *[Complete August 2010]*
- NCSIP-II improvements will eliminate the configuration control confusion that can be associated with incredible scenarios. Implementation will include evaluation of labeling and identification of IROFS and SSCs in the field to address “knowledge gap.” *[In Progress]*

Apparent Violation Response Summary

- Summary of Westinghouse position on apparent violations:
  - The event was self identified and promptly reported to the NRC.
  - The event was of low safety significance.
    - Uranium concentration is well below safe limits.
    - The number of filter press plates never exceeded authorized number.
  - There was a minimal impact on the Regulatory Process since the SSCs are included in the ISA and CSE.

Apparent Violation Response Summary (cont'd)

- Summary of Westinghouse position on apparent violations:
  - Apparent violations 1 & 2 are related and should be combined into one Severity Level IV violation.
  - Apparent violation 3 is essentially another example of the existing open violation.
  - Apparent violation 4 should be a Severity Level IV violation.
  - Apparent violation 5 is denied.
  - Apparent violation 6 should be a Severity Level IV violation.

Management Summary

- Westinghouse is in alignment with the NRC regulatory position on passive design features and has institutionalized this position to ensure compliance.
- Westinghouse established robust and effective corrective actions that are responsive to and comprehensively address the apparent violations.
- Westinghouse has already expended considerable technical resources and continues to do so to upgrade the safety basis via the ongoing NCSIP-II. This will provide lasting and effective upgrades that are risk appropriate.
- Plant Manager will personally monitor NCSIP-II status to ensure progress remains on track.